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ABSTRACT

A survey instrument was designed and administered to a population of currently enrolled and dropout adult students in a post-baccalaureate distance learning program with an individual learner focus. The sample consisted of all actively enrolled students (179) and all students who had been admitted to the program since the program's inception who withdrew before program completion (216), for a total of 395 persons. Fifty percent of the sample (198) responded to a mailed survey. The data from the survey were used to test a predictive model developed to examine the important parameters in adult student persistence in distance learning programs. The independent variables in the model were significant in predicting persistence, explaining 23 percent of the variance in persistence. Univariate tests revealed that intrinsic benefits, age, and level of student ease with individual learning were significant factors. Intrinsic benefits related to enhanced performance and satisfaction on the job. Extrinsic benefits, which were described as enhanced salary and career mobility, were not significant factors related to persistence. Adults in this study appear to be significantly motivated by intrinsic job-related benefits to persist in distance learning programs, with an individual learner focus. (Contains 24 references.) (Author/KC)

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# Predicting Persistence in Distance Learning Programs

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**Predicting Persistence in Distance Learning Programs**
**Abstract**

A survey instrument was designed and administered to a population of currently enrolled and drop-out adult students in a post-baccalaureate distance learning program with an individual learner focus. The data from the survey was used to test a predictive model developed to examine the important parameters in adult student persistence in distance learning programs. The independent variables in the model were significant in predicting persistence ($F=5.670$, $DF=8,151$, $p<.0001$) and explained 23% of the variance in persistence. Univariate tests revealed that intrinsic benefits, age, and level of student ease with individual learning were significant factors. Intrinsic benefits related to one's enhanced performance and satisfaction on the job. Extrinsic benefits which were described as enhanced salary and career mobility were not significant factors related to persistence. Adults from this study appear to be significantly motivated by intrinsic job-related benefits to persist in distance learning programs, with an individual learner focus.

## Predicting Persistence in Distance Learning Programs

### Introduction

Adults are returning to school in record numbers. In the United States, 23 million adults are enrolled in adult education classes, private instruction, or engage in independent learning projects (Merriam and Caffarella, 1991). Many of these adults are professionals who are pursuing advanced degrees. Graduate education, in particular, may be a link to economic and professional advancement for an individual.

Many of these adult learners are enrolling in distance learning programs. Distance learning programs free students from the bondage of time and place. These programs enable students to maintain their busy professional adult life, while completing academic coursework. Through emerging technologies, distance learning programs are becoming more commonplace on our campuses, and represent disciplines as diverse as nursing, business, education and pharmacy, to name a few. Distance learning programs enable individuals, who may not be able to attend traditional campus-based classes, to complete baccalaureate degrees, and in many cases, advanced degrees.

Two approaches to distance learning programs have been categorized. The first approach attempts to simulate face to face classroom activity as closely as possible. Interaction typically occurs electronically through compressed video or computer technology. The time and often the place are fixed. The second approach is aimed at the individual learner. The focus in on the individual learner studying at his or her own convenience and independently. This approach does not limit students to specific times or places, and commonly relies on print materials, audio and video tapes and telephone conferences (Barker, Frisbie, & Patrick, 1989).

The adult education literature and the emerging literature on distance learning have focused considerable attention on three broad areas: motivations and goals of adult learners, barriers or deterrents to adult participation in education, and persistence in distance education programs. Enrollment for adults in post-baccalaureate training has been characterized as a complex decision because it involves a considerable cost/benefit analysis. Adults lose income, undertake considerable expense, may potentially side-track their career, and often decrease time available for family and household responsibilities (Hossler & Gallagher, 1987; Stoecker, 1991). Adults may be motivated to enroll in academic programs by cognitive interests (Wolfgang & Dowling, 1981), social relationships, similar to traditional-aged college students (Stone, 1979) or career related motivations (Mishler, 1983; Stoecker, 1991) The preponderance of evidence suggests that the majority of adults returning to academic programs do so because of career related reasons. Merriam and Caffarella (1991) found that the majority of adult learners, when asked, report that they are returning to the school for job related reasons, be that a promotion or a change to a more satisfying job. A study on professional physical therapists found that the most important factor in the decision to enroll

was the importance the respondent attributed to improving clinical/technical skills necessary for the job (Stoecker, 1991). Smart and Pascarella (1987) found that level of extrinsic job satisfaction was a powerful influence on women's decision to reenter higher education, and intrinsic job satisfaction influenced men's decision to reenter higher education. The evidence suggests that adults are primarily motivated to reenter higher education by the expectation of tangible career related results.

The literature on barriers or deterrents has suggested several different typologies or classifications of deterrents (Cross, 1981; Scanlan, 1986; Valentine & Darkenwald, 1990). Rubenson (1986) has proposed a framework of deterrents that is particular to adults in distance learning programs. He classifies the deterrents into situational, institutional and dispositional. The first category, situational, refers to the individual's unique and personal learning environment, and time available for learning. These deterrents stem from a person's unique life situation. The second category then is institutional deterrents and refers to those characteristics of an academic program that are identified with a particular institution. Examples of institutional barriers include cost, institutional procedures and deadlines, course scheduling, communication problems, and instructional design problems. The third category is dispositional, and this refers to the individual's unique learning style, motivations, and social and economic factors. Garland (1993) based on the work of Woodley and Parlett (1983), Brindley (1988) and Bernard and Amundsen (1989) has suggested a fourth category of deterrents to adults in distance learning programs, and that is epistemological deterrents. Epistemological barriers "reflect a lack of congruence between the student's cognitive and affective characteristics and perceptions of knowledge, and the nature of the knowledge presented in the subject matter." (Garland, 1993, p. 192) While this classification provides a useful framework for understanding adult participation in distance learning programs and in higher education in general, and may be useful for program planners, how deterrents affect persistence or success in distance learning programs has yet to be determined.

There has been a long and steady stream of research on undergraduate and graduate student enrollment and persistence, and some work done on professional student enrollment and persistence. Research on adult persistence in distance learning programs is just emerging. Based on the work of Tinto (1975), several studies have tried to adapt the concepts of social and academic integration to adult persistence in distance learning programs and have met with varying levels of success (Kember, Murphy, Siaw & Yuen, 1991; Pugliese, 1994; Sweet, 1986; Bernard & Amundsen, 1989). The Kember et al model, the most sophisticated of the studies, draws its constructs from the situational, dispositional, and institutional deterrents to adult participation in education using the framework of social and academic integration supplied by Tinto. Using a sample of students from Hong Kong enrolled in professional programs, the Kember et al. persistence model explained 80% of the total variance in student persistence. However, a large portion of that variance is derived from the

inclusion of grade point average in the model. The intervening variables included in the model to represent the constructs of social and academic integration indicated much lower coefficients. This suggests that there are other factors that contribute to student persistence in distance learning programs. The Kember et al. model, and the other studies fail to take into consideration the job-related motivation of adults returning to academic programs clearly evident in the literature on adult learners.

The purpose of this study is to develop and test a model of adult student persistence in distance learning programs with an individual focus, drawing on the literatures of adult education and persistence.

**Theoretical Model**

Five sets of variables were hypothesized to have a relationship to persistence for adult learners enrolled in distance learning programs. The first set of variables measured individual characteristics and included age and gender, demographic characteristics commonly included in persistence studies. The second set of variables measured previous college experience, and included college grade point average, and level of satisfaction with college experience. Previous college experience has been found to be related to persistence to graduate education (Ethington & Smart, 1986) and as suggested by Stoecker (1991), "a good fit between the student and the institution promoting positive academic integration and overall satisfaction will facilitate further education commitment to advanced schooling" (p. 693). The third set of independent variables measured intrinsic job satisfaction. It has been suggested that adults return to school when they experience low levels of intrinsic job satisfaction in their current position or profession (Smart & Pascarella, 1987). The fourth set of independent variables measured attitude toward individual learning, a dispositional deterrent. Since distance learning programs separate the student from the campus and the usual sources of motivation (faculty and peers), ease with individual learning is paramount for student success, particularly for those students enrolled in distance learning programs with an individual focus. Recent work by Garland (1993) has suggested that persisters and nonpersisters face the same situational, institutional, and epistemological deterrents, so these deterrents were considered a constant in the model. For example, all students would experience the same program costs and scheduling problems, and time management issues would be similiar for the majority of busy working adults. The final set of independent variables included intrinsic and extrinsic perceived benefits of persisting to degree completion. The literature on adult learners suggest that adult students are motivated by tangible job-related goals and benefits. Therefore two constructs measuring expected benefits of obtaining the degree were included in the model. Intrinsic benefits refer to factors related to job content while extrinsic benefits referred to factors extraneous to the content of the job. Contrary to Scanlan and Darkenwald (1984) who observed that motivation orientation factors have not proved useful in distinguishing participants from nonparticipants, the preponderance of evidence in the adult

education literature emphasizes the importance of motivation or perceived benefits as an integral factor in student success in returning to and succeeding in higher education.

**Methods**

Sample The sample for this study was drawn from one institution's distance learning program. The program is designed as a part-time, adult, post-baccalaureate professional program in pharmacy. It can be characterized as having an individual focus. Students receive learning materials, and work through the materials individually with little contact with other students or the instructor. The program has been in existence for 10 years and is national in scope. It is designed to allow busy professionals to maintain their practice, while working towards a post-baccalaureate academic degree. The overall sample consisted of all actively enrolled students (N=179) and all students who had been admitted to the program since the program's inception, but withdrew before program completion (N=216), for a total of 395 individuals.

Survey and Variables A survey instrument was developed and pilot tested to assure that the questions and items were clear and unambiguous. The first section of the survey included questions on individual characteristics and demographics and were forced choice items. The second section included questions on the respondents satisfaction with his/her previous college experience, their previous college grade point average, and their ease with individual learning. These questions were forced choice or employed a Likert scale. The third section of the survey included items that assessed the respondents intrinsic job satisfaction with their current position. Job satisfaction has generally been defined by two sets of factors. Intrinsic factors of job satisfaction refer to those factors that are related to job content. Extrinsic factors of job satisfaction refer to those faction that are extraneous to the job content, such as salary and working conditions (Cox & Carroll, 1988). These items were taken from the University of Michigan's Quality of Employment Survey (Quinn & Shepard, 1974) and employ a four-point Likert scale. An example of the statements include "I am given a lot of freedom to decide how I do my own work," and "I can see the results of my work."

In the final section, respondents were asked what they perceived to be important benefits, if any, of completing the program and obtaining the degree. The question included a list of factors, and respondents were asked to circle the response that best agreed with their perception. Responses included "not at all important", "not too important", "somewhat important", and "very important." Respondents were also given space to write in their own factors. The compound variable intrinsic benefits included items such as "enhanced job performance" and "enhanced job satisfaction." The compound variable extrinsic benefits included items such as "enhanced job security", "better career mobility" and "enhanced salary." The operational definitions for the variables in the model, and the coefficient alphas when appropriated are listed in table 1. A copy of the survey may be obtained from the author upon request.

Procedure The survey, return postage paid envelope, and a detailed, personally signed, cover letter were mailed to all individuals in the sample. Address labels were obtained from college records. A second follow-up mailing was sent six weeks after the initial mailing.

Analysis Regression analysis was used to test the predictive validity of the model. Significance level was set a priori at .05 due to the sample size.

**Results**

The response rate for the study was 50% (N=198). The sample can best be described as equally distributed between genders, approximately half of the respondents were between the age of 30 and 40, the majority are caucasian, married, with children. Seventy-eight percent reported working more than 40 hours per week. A description of the sample is presented in table 2, and means, standard deviations and correlation coefficients for all the variables in the study are presented in table 3.

Persistence (as measured by active enrollment status) was regressed on the set of independent variables. The set of independent variables were significant in predicting enrollment ($F=5.670$, $p<.0001$, $DF=8,151$) and explained 23% of the variance in the dependent variable. Univariate results indicated that the variable measuring intrinsic benefits indicated a positive relationship with persistence ($B=.0559^{**}$). In other words, respondents with higher levels of perceived intrinsic benefits were more likely to persist in the program. On the other hand, age and level of ease with learning on own indicated a negative relationship ($B=-.0626^{*}$ and $B=-.0963^{**}$ respectively). Respondents who were older and who had higher levels of ease with learning on their own were less likely to persist in the program. Summary of the regression analysis is presented in table 4. An examination of the beta weights indicates that intrinsic benefits was the most influential variable in the model in explaining persistence.

**Limitations**

This study was intended to be exploratory, and attempted to build a model drawing from various literatures, to explain adult persistence in distance learning programs. Certainly, the study is limited by its 50% response rate, and the single institution sample. However, given the unique and varied nature of distance learning programs, to control for the influence of instructional modality, focus of distance learning program, epistemological and institutional deterrents, a single institution study was warranted.

The profession of pharmacy is currently under pressure from economics, health care reform, and emerging technologies to transform itself from a product orientation to a patient orientation. This unique situation may be adding additional pressure or motivation on individuals to retrain and retool through further education. Clearly this model needs to be tested on other disciplines and other academic programs.

**Conclusions**

Respondents with higher levels of perceived intrinsic benefits of obtaining the degree were more likely to persist in the distance learning professional program under study.

Individuals saw the academic coursework as an avenue to enhanced job performance, enhanced job satisfaction, improved clinical skills, better patient care, and as a way to remain current with knowledge. The variable extrinsic benefits which was comprised of items that measured enhanced job security, better career mobility, competitive advantage when applying for job, competitive advantage when being considered for promotion, and enhanced salary, was not significant in predicting continued enrollment. Clearly individuals who were motivated by better job performance rather than personal extraneous gain were more likely to continue their studies. These results support previous findings that adults are motivated to continue their education by specific career-related factors. However, it appears, for this sample, that the motivation needs to stem from an internal desire for more satisfaction and challenge in one's career, rather than desires for enhanced salary and career mobility. However, by achieving intrinsic benefits, respondents my indirectly obtain the extrinsic benefits.

Intrinsic job satisfaction in respondents' current position was not related to persistence. In other words, the results suggest that persisters may exhibit low, average, or high levels of intrinsic job satisfaction. Whatever the level of intrinsic job satisfaction in their current position, persisters wanted to perform at a higher level, and saw additional academic training as an avenue to that opportunity.

Older students had a more difficult time in persisting in the distance learning program than younger students. The age range of this sample was from upper twenties to over sixty. The results suggest that adults wishing to return to school through distance learning programs should do so while at the beginning or middle of their careers, rather than wait until they are older. Adult learning literature suggests that the process of physical aging and psychological change may affect learning in later adulthood. Younger adults or middle aged adults who find themselves in a life transition may be more ready to learn (Merriam and Caffarella, 1991). For example, a middle-aged professional who is facing reorganization in his/her place of employment may be ready to learn new skills and concepts that may strengthening his/her job performance and satisfaction.

Individuals with higher levels of ease in learning individually, surprisingly, were less likely to persist. The distance learning program under study had an individual learner focus. It was expected that persisters would indicate higher levels of ease with individual learning that nonpersisters. However that was not the case. This finding may be an anomaly given the nature of the sample. This self-selected population of learners, understanding the nature of the academic program, may have selected not to enter the program if they did not have the skills needed to learn on their own. Individuals with dispositional deterrents may simple select not to pursue this type of academic program. Alternatively, adults may not be able to realistically assess their inidividual learning styles. This suggests a need for adult educators to help adult learners prepare for learning with self-assessment exercies and possibly learning style inventories.

While the model only explained about a quarter of the variance in persistence, the value of including motivation factors should not be disregarded. Further research needs to expand beyond the existing persistence models of Tinto and others and consider the unique characteristics of adults learners and the unique characteristics of distance learning programs.

The emerging trends of adult students and distance learning are changing higher education. This study has attempted to explain factors that influence success for adults enrolled in distance learning programs.

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Table 1. Variable Definition

| Variable | | Definition |
|---|---|---|
| Independent Variable | | |
| 1. | Gender | A dichotomous measure coded 1=female, 2=male. |
| 2. | Age | A forced choice question. 1=≤30, 2=31 to 35, 3=36 to 40, 4= 41 to 45, 5=46 to 50, 6=≥51 |
| 3. | Previous College Grade Point Average at Graduation | A forced choice question 1=≤2.0, 2=2.01 to 2.50, 3=2.51 to 3.00, 4=3.01 to 3.50, 5=3.51 to 4.00 (on a 4 point scale) |
| 4. | Satisfaction with Previous College Experience | 1=not at all, 2=not too much, 3=somewhat, 4=very much |
| 5. | Ease with Learning on Own | 1=strongly disagree, 2=disagree, 3=no opinion, 4=agree, 5=strongly agree |
| 6. | Intrinsic Job Satisfaction | A compound variable comprised of six items. Coefficient Alpha=0.8729 |
| 7. | Intrinsic Benefits | A compound variable comprised of 5 items. Coefficient Alpha =0.8801 Construct measures benefits related to job content: enhanced job performance, enhanced job satisfaction, improved clinical skills, better patient care, remain current with knowledge |
| 8. | Extrinsic Benefits | A compound variable comprised of 5 items. Coefficient Alpha=0.8245 Construct measures benefits extraneous to job content: salary, promotion, job security, career mobility, job competitiveness |
| Dependent Variable | | |
| 9. | Persistence | 0=nonpersistence 1=persistence |

Table 2. Description of the Sample

| | | N | % |
|---|---|---|---|
| Gender | Male | 97 | (49.0) |
| | Female | 97 | (49.0) |
| | Not reported | 4 | (2.0) |
| | | | |
| Age | ≤30 | 38 | (19.2) |
| | 31-35 | 44 | (22.2) |
| | 36-40 | 47 | (33.7) |
| | 41-45 | 38 | (19.2) |
| | 46-50 | 15 | (7.6) |
| | ≥51 | 12 | (6.1) |
| | Not reported | 4 | (2.0) |
| | | | |
| Ethnicity | White Non-Hispanic | 151 | (76.3) |
| | Black | 18 | (9.1) |
| | Hispanic | 3 | (1.5) |
| | Asian | 18 | (9.1) |
| | Other | 8 | (4.0) |
| | | | |
| Marital Status | Married | 124 | (62.6) |
| | Single | 69 | (34.8) |
| | Not reported | 5 | (2.5) |
| | | | |
| Number of Children | None | 90 | (45.5) |
| | 1 | 28 | (14.1) |
| | 2 | 40 | (20.2) |

| | | | |
|---|---|---|---|
| | 3 | 20 | (10.1) |
| | 4 or more | 15 | (7.6) |
| | Not reported | 5 | (2.5) |
| | | | |
| Average Number of Hours Worked Per Week | ≤10 | 7 | (3.5) |
| | 11-20 | 5 | (2.5) |
| | 20-30 | 7 | (3.5) |
| | 30-40 | 22 | (11.1) |
| | 40 or more | 144 | (72.7) |
| | Not reported | 13 | (6.6) |
| | | | |
| Enrollment Status | Actively enrolled | 121 | (61.1) |
| | Withdrew | 77 | (38.9) |

N = 198

Table 3. Means Standard Deviations and Correlations of Sample Variables in Model to Predict Persistence in Distance Learning Program

| Variables | Mean | St. Dev | Correlation Gender | Age | Prev. Coll. G.P.A. | Prev. Coll. Sat. | Intrinsic Job Sat. | Persistence | Intrinsic Benefit | Extrinsic Benefit | Ease with Learning |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gender | 1.512 | .501 | 1.00 | | | | | | | | |
| Age | 2.931 | 1.454 | .230 | | | | | | | | |
| Previous College GPA | 3.600 | .913 | -.113 | -.035 | | | | | | | |
| Satisfaction with Previous College Experience | 3.188 | .754 | .077 | .046 | .219 | | | | | | |
| Intrinsic Job Satisfaction | 18.519 | 4.174 | -.038 | .058 | .111 | .151 | | | | | |
| Persistence | .662 | .474 | -.009 | -.234 | -.125 | -.121 | -.168 | | | | |
| Intrinsic Benefits | 17.775 | 2.997 | .040 | -.148 | -.017 | .077 | -.104 | .349 | | | |
| Extrinsic Benefits | 16.037 | 3.102 | -.037 | -.335 | -.012 | .013 | -.068 | .227 | .543 | | |
| Ease with Learning on Own | 3.462 | .983 | .052 | -.022 | .200 | .035 | .130 | -.176 | .121 | .075 | 1.00 |

Table 4. Summary of Regression Analysis to Predict Persistence in Distance Learning Programs

| Independent Variable | B | Beta |
|---|---|---|
| Gender | .0299 | .0317 |
| Age | -.0626* | -.1920* |
| Satisfaction with Previous College Experience | -.0710 | -.1128 |
| Previous College GPA | -.0258 | -.0496 |
| Intrinsic Job Satisfaction | -.0082 | -.0720 |
| Ease with Learning on Own | -.0963** | -.1996** |
| Perceived Intrinsic Benefits | .0559** | .3531** |
| Perceived Extrinsic Benefits | -.0027 | -.0174 |

$F=5.670^{**}$ $R^2=.231$ DF=8,151

*$p \leq .05$ **$p \leq .01$

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